

REMARKS

Claims 28 and 30 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 25 and 29 to 34 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 14, 16 to 20, 22, 24, 26, 28 to 31 and 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,577,389 to Albertson et al. (hereinafter "Albertson") in view of U.S. Patent No. 4,633,681 to Weber (hereinafter "Weber"). Claim 14 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albertson in view of U.S. Patent No. 3,520,330 to Szwargulski (hereinafter "Szwargulski"). Claims 14 and 32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albertson in view of U.S. Patent No. 2,451,385 to Groat (hereinafter "Groat"). Claims 14 and 33 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albertson in view of U.S. Patent No. 3,883,030 to Mathews et al. (hereinafter "Mathews"). Claim 25 would be allowable is rewritten or amended to overcome the rejections under 35 U.S.C. §112, second paragraph.

Claims 25, 28 and 29 to 34 have been amended in response to the Office Action. Reconsideration of the application based on the foregoing amendments and the following remarks is respectfully requested.

Rejections under 35 U.S.C. § 112

Claims 28 and 30 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

Claim 28 has been amended to more clearly and particularly claim the invention.

Withdrawal of the rejection of claims 28 and 30 under 35 U.S.C. §112, first paragraph is respectfully requested.

Claims 25 and 29 to 34 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention. Claims 25 and 29 to 34 have been amended to correct the antecedent basis.

Withdrawal of the rejection to claims 25 and 29 to 34 under 35 U.S.C. §112, second paragraph, is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 14, 16 to 20, 22, 24, 26, 28 to 31 and 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albertson in view of Weber.

Albertson discloses a rupture disk fragment collection trap for refrigeration systems. “The apparatus comprises a rupture disk; a pressure relief valve; a passageway connected between the rupture disk and the pressure relief valve; and a trap in the passageway for preventing interference with the operation of the pressure relief valve by debris passing through said passageway following rupture of the rupture disk.” (Albertson, Col. 2, lines 55 to 61). The pressure relief valve 27 is a conventional pop-off relief valve. (Id., Col. 6, lines 18 to 25).

Weber discloses a refrigerant expansion device. “When the compressor comes on, pressure will build up in the liquid line very quickly and will cause ball 18 to be forced into seat 20. This is the condition for the operating cycle of the refrigeration system. As will be recognized, a small gap will be present between ball 18 and groove 22 thereby providing an orifice to bleed refrigerant into the evaporator via inlet tube 14.” (Col 3, lines 55 to 62).

Claim 14 has recites “[a] compressor, comprising:

a safety device for limiting high pressure within a chamber of the compressor, comprising a rupture disk and a pressure relief valve, the rupture disk and the pressure relief valve forming a region there-between, the rupture disk having a first side connected to the compressor chamber and a second side connected to the region, the rupture disk hermetically sealing the chamber from the region until a pressure of the compressor chamber exceeds a predetermined level, the pressure relief valve having a predetermined leakage of atmospheric pressure into the region while the pressure of the compressor chamber is below the

predetermined level and configured to allow a slow release of the system pressure after the pressure of the compressor chamber exceeds the predetermined level.”

Albertson admittedly fails to teach or show “the pressure relief valve having a predetermined leakage of atmospheric pressure into the region while the pressure of the compressor chamber is below the predetermined level and configured to allow a slow release of the system pressure after the pressure of the compressor chamber exceeds the predetermined level” required by claim 14. The Office Action asserts it would have been obvious “to employ in Albertson et al. a leakage passage, located at the junction of the valve head and seat, by the check valve device 27 of Albertson.” However, there is absolutely no reason or motivation for one of skill in the art to place a fluid leakage passage in Albertson as asserted. Placing a leakage passage at check valve 27 of Albertson would go against the purpose of the invention for collecting rupture disk fragments in the collection trap. If Albertson were modified to include a leakage passage at check valve 27, rupture disk fragments would flow through such leakage passages and defeat the purpose of the invention. It is respectfully submitted that one of skill in the art would never have a reason or motivation to modify Albertson in view of Weber. It is respectfully submitted that claim 14 is not obvious over Albertson in view of Weber.

Claim 28 has been amended to recite “[a] safety device for a compressor in an air-conditioning system of a motor vehicle, the safety device comprising:

a rupture disk in contact with a refrigerant of the air-conditioning system and configured to rupture when a pressure of the refrigerant exceeds a first predetermined pressure; and

a pressure valve disposed in a closed position downstream of the rupture disk, a predetermined leak being associated with the pressure valve in the closed position so as to allow atmospheric pressure to contact a downstream side of the rupture disk when the rupture disk is intact and configured to allow a slow leak of the refrigerant when the rupture disk is ruptured and when the pressure of the refrigerant is above a second predetermined pressure, wherein the second predetermined pressure is lower than the first predetermined pressure.”

As discussed above, Albertson admittedly fails to teach or show “a predetermined leak being associated with the pressure valve in the closed position so as to allow atmospheric pressure to contact a downstream side of the rupture disk when the rupture disk is intact” required by claim 28. The Office Action asserts it would have been obvious “to employ in Albertson et al. a leakage passage, located at the junction of the valve head and seat, by the check valve device 27 of Albertson.” However, there is absolutely no reason or motivation for one of skill in the art to place a fluid leakage passage in Albertson as asserted. Placing a leakage passage at check valve 27 of Albertson would go against the purpose of the invention for collecting rupture disk fragments in the collection trap. If Albertson were modified to include a leakage passage at check valve 27, rupture disk fragments would flow through such leakage passages and defeat the purpose of the invention. It is respectfully submitted that one of skill in the art would never have a reason or motivation to modify Albertson in view of Weber. It is respectfully submitted that claim 28 is not obvious over Albertson in view of Weber.

Withdrawal of the rejection of independent claim 14, 16 to 20, 22, 24, 26, 28 to 31 and 34 under 35 U.S.C. §103(a) is respectfully requested.

Claim 14 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albertson in view of Szwargulski.

Albertson is discussed above.

Szwargulski discloses a porous ball valve for use as a carburetor choke valve. (Szwargulski, Col. 1, lines 19 to 20). “[T]he moving element of the valve is made porous, and the moving element is preferably in the form of a ball, since a ball is likely to have the maximum amount of movement.” (Id., Col. 1, lines 46 to 49). “[T]he ball 14 may be spring biased by a spring between it and barrier 18...A check valve of the type shown in Fig. 1 permits flow in the forward or upward direction and restricts flow in the reverse or downward direction. It is necessary, however, in some applications of check valves to permit bleeding or limited flow in the reverse direction.” (Id., Col. 2, lines 3 to 10).

Claim 14 recites “[a] compressor, comprising:

a safety device for limiting high pressure within a chamber of the compressor, comprising a rupture disk and a pressure relief valve, the rupture disk and the pressure relief valve forming a region there-between, the rupture disk having a first side connected to the compressor chamber and a second side connected to the region, the rupture disk hermetically sealing the chamber from the region until a pressure of the compressor chamber exceeds a predetermined level, the pressure relief valve having a predetermined leakage of atmospheric pressure into the region while the pressure of the compressor chamber is below the predetermined level and configured to allow a slow release of the system pressure after the pressure of the compressor chamber exceeds the predetermined level.”

As discussed above, Albertson admittedly fails to teach or show “the pressure relief valve having a predetermined leakage of atmospheric pressure into the region while the pressure of the compressor chamber is below the predetermined level and configured to allow a slow release of the system pressure after the pressure of the compressor chamber exceeds the predetermined level” required by claim 14. The Office Action asserts it would have been obvious “to employ in Albertson et al. a porous valve head in the relief valve 27 allowing limited fluid flow across the otherwise closed relief valve.” However, there is absolutely no reason or motivation for one of skill in the art to place a fluid leakage passage in Albertson as asserted. Placing a leakage passage at check valve 27 of Albertson would go against the purpose of the invention for collecting rupture disk fragments in the collection trap. If Albertson were modified to include a leakage passage at check valve 27, rupture disk fragments would flow through such leakage passages and defeat the purpose of the invention. It is respectfully submitted that one of skill in the art would never have a reason or motivation to modify Albertson in view of Szwargulski. It is respectfully submitted that claim 28 is not obvious over Albertson in view of Szwargulski.

Withdrawal of the rejection of independent claim 14 and 23 under 35 U.S.C. §103(a) is respectfully requested.

Claims 14 and 32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albertson in view of Groat.

Albertson is discussed above.

Groat discloses a means for operating an evaporating coil temporarily as a condenser including a valve comprising “ordinary flap check valves 24 each with a belled port 25.” (Col. 2, lines 26 to 28).

Claim 14 recites “[a] compressor, comprising:

a safety device for limiting high pressure within a chamber of the compressor, comprising a rupture disk and a pressure relief valve, the rupture disk and the pressure relief valve forming a region there-between, the rupture disk having a first side connected to the compressor chamber and a second side connected to the region, the rupture disk hermetically sealing the chamber from the region until a pressure of the compressor chamber exceeds a predetermined level, the pressure relief valve having a predetermined leakage of atmospheric pressure into the region while the pressure of the compressor chamber is below the predetermined level and configured to allow a slow release of the system pressure after the pressure of the compressor chamber exceeds the predetermined level.”

As discussed above, Albertson admittedly fails to teach or show “the pressure relief valve having a predetermined leakage of atmospheric pressure into the region while the pressure of the compressor chamber is below the predetermined level and configured to allow a slow release of the system pressure after the pressure of the compressor chamber exceeds the predetermined level” required by claim 14. The Office Action asserts it would have been obvious “to employ in Albertson et al. a valve head having a leak passage located in the valve head in the relief valve 27 for the purpose of allowing limited fluid flow across the otherwise closed relief valve.” However, there is absolutely no reason or motivation for one of skill in the art to place a fluid leakage passage in Albertson as asserted. Placing a leakage passage at check valve 27 of Albertson would go against the purpose of the invention for collecting rupture disk fragments in the collection trap. If Albertson were modified to include a leakage passage at check valve 27, rupture disk fragments would flow through such leakage passages

and defeat the purpose of the invention. It is respectfully submitted that one of skill in the art would never have a reason or motivation to modify Albertson in view of Groat. It is respectfully submitted that claim 28 is not obvious over Albertson in view of Groat.

Withdrawal of the rejection of these claims under 35 U.S.C. §103(a) is respectfully requested.

Claims 14 and 33 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albertson in view of Mathews.

Albertson is discussed above.

Mathews discloses breather cap apparatus for a spring actuated brake mechanism. "The breather cap apparatus closing off the spring chamber of a brake mechanism." (Col. 2, lines 4 to 5).

Claim 14 recites "[a] compressor, comprising:

a safety device for limiting high pressure within a chamber of the compressor, comprising a rupture disk and a pressure relief valve, the rupture disk and the pressure relief valve forming a region there-between, the rupture disk having a first side connected to the compressor chamber and a second side connected to the region, the rupture disk hermetically sealing the chamber from the region until a pressure of the compressor chamber exceeds a predetermined level, the pressure relief valve having a predetermined leakage of atmospheric pressure into the region while the pressure of the compressor chamber is below the predetermined level and configured to allow a slow release of the system pressure after the pressure of the compressor chamber exceeds the predetermined level."

As discussed above, Albertson admittedly fails to teach or show "the pressure relief valve having a predetermined leakage of atmospheric pressure into the region while the pressure of the compressor chamber is below the predetermined level and configured to allow a slow release of the system pressure after the pressure of the compressor chamber exceeds the predetermined level" required by claim 14. The Office Action asserts it would have been obvious "to employ in Albertson et al. a valve head at relief valve 27 having a leak passages

located on the valve head in the form of a score or texture...for the purpose of allowing limited fluid flow across the otherwise closed relief valve.” However, there is absolutely no reason or motivation for one of skill in the art to place a fluid leakage passage in Albertson as asserted. Placing a leakage passage at check valve 27 of Albertson would go against the purpose of the invention for collecting rupture disk fragments in the collection trap. If Albertson were modified to include a leakage passage at check valve 27, rupture disk fragments would flow through such leakage passages and defeat the purpose of the invention. It is respectfully submitted that one of skill in the art would never have a reason or motivation to modify Albertson in view of Mathews. It is respectfully submitted that claim 28 is not obvious over Albertson in view of Mathews.

Withdrawal of the rejection of these claims under 35 U.S.C. §103(a) is respectfully requested.

Allowable Claims

Claim 25 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. §112. Claim 25 has been amended and is now believed to be allowable.

Withdrawal of the objection to claim 25 is respectfully requested.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance and applicants respectfully request such action.

If any additional fees are deemed to be due at this time, the Assistant Commissioner is authorized to charge payment of the same to Deposit Account No. 50-0552.

Respectfully submitted,

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